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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/847,636	05/02/2001	Jiebo Luo	79704DMW	6601

1333 7590 01/14/2005

PATENT LEGAL STAFF
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EXAMINER

FOULADI SEMNANI, FARANAK

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,636

Applicant(s)

LUO ET AL.

Examiner

Faranak Fouladi

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-18 and 31-34 is/are allowed.
- 6) ☒ Claim(s) 1-13, 19-30 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: See Continuation Sheet.

Continuation of Attachment(s) 6). Other: copy of IEEE Transaction Vol. 7 No. 2 front page with address label.

DETAILED ACTION

1. This action is responsive to communications: application, filed on 05/02/01 and IDS filed on 01/09/04; Amendment A filed 07/26/04.
2. Claims 1-35 are pending in the case, with claims 1, 14, 15, 19, 31 and 35 being independent.
3. The present title of the application is "Block sampling based method and apparatus for texture synthesis" (as originally filed).
4. **THIS ACTION IS MADE FINAL.**

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-13, 19-30 and 35 are rejected under 35 U.S.C. 102(a) as being anticipated by Bar-Joseph et al. (Bar-Joseph) "Texture Mixing and Texture Movie Synthesis using Statistical Learning" 04/2001 IEEE Transactions on Visualization and Computer Graphics, Vol. 7, No. 2, April-June 2001.
7. Regarding independent claim 1, "a method of synthesizing a texture from an array of pixels, comprising the steps of: decomposing the array of pixels through application of a transform to produce a plurality of coefficients ordered to

correspond to the array of pixels; defining a plurality of sections within said plurality of coefficients; reordering said plurality of sections, and performing an inverse transform on said reordered plurality of sections." Bar-Joseph disclose in section 3 and in section 4 lines 7-9.

Bar-Joseph discloses a method of synthesizing 2D textures by using a steerable pyramid that is a multi-resolution analysis.

8. Regarding dependent claim 2, "the method of claim 1 wherein the array of pixels is a reference texture image." Bar-Joseph disclose in section 1.2 lines 25-27.
9. Regarding dependent claim 3, "the method of claim 1 wherein said reordered plurality of sections are reordered by random selection." Bar-Joseph disclose in section 2 second column lines 1-5.
10. Regarding dependent claim 4, "the method of claim 1 further comprising the steps of storing said plurality of coefficients in a memory array and wherein said moving step is accomplished by moving coefficient values within said memory array on a section by section basis." Bar-Joseph disclose in section 5.1.
11. Regarding dependent claim 5, "the method of claim 1 wherein the array of pixels is a texture image, and the size of said section is selected to be at least as large as a texel element within the texture image." Bar-Joseph disclose in section 6.1.1 second column lines 2-29.
12. Regarding dependent claim 6, "the method of claim 1 wherein said sections are block shaped." Bar-Joseph disclose in section 3 second column 3rd paragraph lines 12-13.

13. Regarding dependent claim 7, "the method of claim 1 wherein said transform is a steerable wavelet transform that produce said plurality of coefficients as a multi-resolutional representation of the pixels, and said inverse transform is an inverse wavelet transform." Bar-Joseph disclose in section 3 second column 1st and 4th paragraph.
14. Regarding dependent claim 8, "the method of claim 7 wherein said plurality of coefficients includes at least a lowpass band representation of the pixels." Bar-Joseph disclose in section 3 second column 3rd paragraph.
15. Regarding dependent claim 9, "the method of claim 7 wherein said steerable wavelet transform accomplishes a mapping of the pixels from a spatial domain to coefficients in the wavelet domain and said inverse wavelet transform accomplishes a mapping of said plurality of coefficients from the wavelet domain to pixels in the spatial domain." Bar-Joseph disclose in section 6.1.2.
16. Regarding dependent claim 10, "the method of claim 7 wherein said plurality of sections are sampled and said inverse wavelet transform is applied recursively at all resolution levels of said multi-resolutional representation." Bar-Joseph disclose in section 3 second column 3rd and 4th paragraphs.
17. Regarding dependent claim 11, "the method of claim 1 wherein the array of pixels includes a red pixel array, a green pixel array, and a blue pixel array, forming a color image, further comprising the steps of repeating said decomposing and said performing steps three times, for each of the red pixel

array, the green pixel array, and the blue pixel array, while utilizing the same defining and reordering steps for each." Bar-Joseph disclose in section 5.1.

18. Regarding dependent claim 12, "the method of claim 1 wherein said texture is scaled to a different size according to a scaling factor, further comprising the steps of: randomly sampling said plurality of sections and moving the coefficients to a number of new sections equal to the number of said plurality of sections times said scaling factor." Bar-Joseph disclose in section 6.1.1 second column 1st and 2nd paragraphs.

19. Regarding dependent claim 13, "the method of claim 1 wherein said plurality of sections are scaled to a different size according to a scaling factor, further comprising the step of interpolating the coefficient's sizes by said factor." Bar-Joseph disclose in section 6.1.1 second column 3rd paragraphs.

20. Claims 19-30 recite apparatus for performing the method of claims 1-13; therefore they are similar in scope and rejected under the same rationale.

21. Claim 35 recites means for performing the method of claim 1; therefore it is similar in scope and rejected under the same rationale.

Allowable Subject Matter

22. Claims 14-18 and 31-34 are allowed.

23. The following is a statement of reasons for the indication of allowable subject matter: The prior art cited in its entirety fails to teach or suggest a method and

apparatus for synthesizing a directional texture from an image texture having an array of pixels which integrates estimation of dominant texture direction and the synthesis algorithm to handle directional textures. The dominant direction is used to orient and then control the synthesis process so as to preserve the dominant reference image direction.

Response to Arguments

24. Applicant's arguments, see pages 9-10, filed 07/26/04, with respect to claims 14-18 and 31-34 have been fully considered and are persuasive. The rejection under 35 U.S.C § 112, first paragraph of claims 14-18 and 31-34 has been withdrawn.

25. Applicant's arguments, see page 11, filed 07/26/04 have been fully considered but they are not persuasive. Applicant argues in the last paragraph "Hence, the relevant date of inquiry for a journal article under a 102 analysis is the date of publication, not the date the article was first received by the publisher or the date upon which the article was accepted by the publisher."

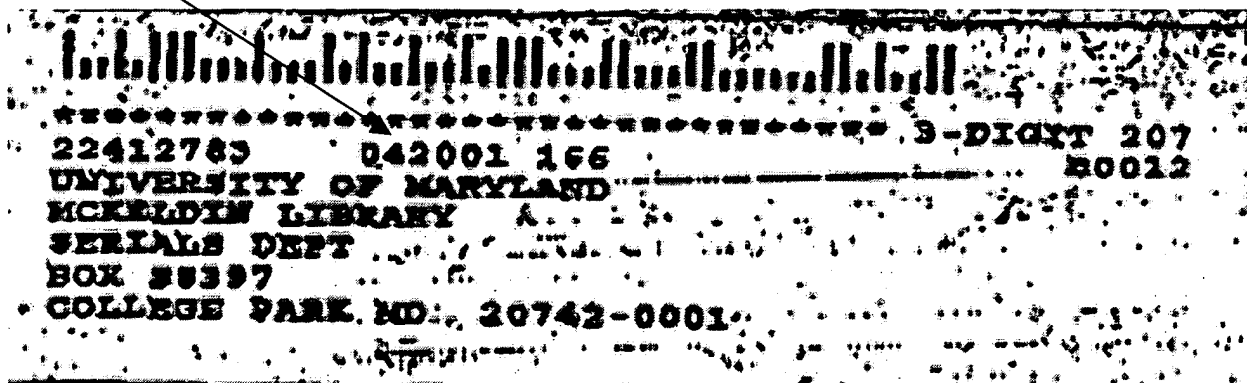
The date the article was first mailed out to subscriber (i.e. libraries) by the publisher is the date that the article becomes available as prior art.

Since the IEEE Transactions on Visualization and Computer Graphics Volume 7 Number 2, was mailed out to subscriber (public) in April 2001 it does qualify as prior art under 35 U.S.C § 102(a). The following address labels show the date as April of 2001.

Art Unit: 2674

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NATIONAL RESEARCH COUNCIL
1500 MONTREAL RD
OTTAWA
CANADA ON K1A 0S2

Date the IEEE
Transaction
was mailed out
(April 2001)



Conclusion

26. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Faranak Fouladi** whose telephone number is **703-305-3223**. The examiner can normally be reached on Mon-Fri from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe** can be reach at **(703) 305-4709**.

Any response to this action should be mailed to:


Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.



RICHARD HJERPE 1/12/05
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Faranak Fouladi
Patent Examiner
Art Unit 2674
January 10, 2005